



## News Release

CFM14-027

### **CFM' s LEAP engine testing continues on schedule; Results validating performance & operability targets**

- 20 LEAP engines planned to be on test by year-end
- Program on track for LEAP-1A/-1C engine certification in 2015

FARNBOROUGH, England — 13 July 2014 — CFM International's LEAP engine certification program is proceeding on schedule and the company is on track to have 20 total engines on test by year end.

The first LEAP-1B engine began testing on 13 June, three days ahead of schedule, at Snecma (Safran) facilities in Villaroche, France. The first full LEAP-1A/-1C engine began ground testing in September 2013, two days ahead of schedule, at GE facilities in Peebles, Ohio.

"As I have said before, the LEAP engine is a really exceptional motor," said Allen Paxson, CFM executive vice president. "With each cycle we log, our confidence in the technology choices we made continues to grow. We believe that the LEAP engine will provide the best fuel efficiency in its thrust class out of the box and continue to retain that advantage over the life of the product. We can't wait to get this engine into service."

Through the end of June, five LEAP engines had accumulated 1,500 cycles in the early stages of testing. This follows nearly six years of exhaustive component and rig testing, including three core tests (525 total hours); a 5,000-cycle endurance test on the composite fan; bird ingestion and fan blade-out rig tests; more than 5,000 hours of TAPS combustor testing; and approximately 4,100 cycles testing LEAP hardware in a GEnx engine, including turbine blades and CMC shrouds.

"We couldn't be happier with the results we are achieving," said Cédric Goubet, executive vice president for CFM. "And our team continues to do a phenomenal job of keeping this program on schedule. We are subjecting this engine to conditions more severe than it will likely ever see in commercial service and it has met every challenge beautifully. As our engineers say, this engine wants to run and we have had many instances of it running 20+ hours a day, non-stop. The LEAP engine will absolutely deliver everything we have promised and more."

These engines are part of the most extensive ground and flight test certification program in CFM's history. Overall, the test plan will encompass 60 engine builds over the next three years and will accumulate approximately 40,000 cycles before entry into service.

The LEAP-1B engine started the first time and, after a series of break-in runs, was running at full power in a matter of hours. The engine recently completed its first ground test program, validating all of the advanced technologies in the engine, including the carbon fiber composite fan, the TAPS combustor, the CMC shrouds, and the HPT blade design. The engine demonstrated smooth mechanical operation, robust starting, and excellent operability.

In January 2014, the LEAP-1A – the very first LEAP engine tested – successfully completed a series of early icing tests, one year ahead of required certification testing. The engine behaved very well in extremely harsh conditions, validating pre-test predictions and reinforcing the company's confidence that the engine will certify on time and meet the performance and reliability promises made to its customers.

Another LEAP-1A engine is currently undergoing early block testing. This is one of the most grueling the engine will endure. During the course of this test, the engine is operating at triple redline: maximum fan speed; maximum core speed; and maximum exhaust gas temperature. Results to date are in line with pre-test predictions and are giving the company even more confidence going into the actual certification block test, scheduled to begin year-end 2014.

Both the LEAP-1C and LEAP-1A configurations are on track for flight testing on GE' s modified Boeing 747 flying testbed at its facilities in Victorville, California. The LEAP-1C recently completed a ground test program and will be the first variant to fly.

The foundation of the LEAP engine is heavily rooted in advanced aerodynamics, environmental, and materials technology development programs. This revolutionary engine will provide 15 percent better fuel consumption and an equivalent reduction in CO2 emissions compared to today' s best CFM engine, along with dramatic reductions in engine noise and emissions. All this technology brings with it CFM' s legendary reliability and low maintenance costs.

The LEAP engine promises to bring double-digit improvements in fuel efficiency, emissions and noise, while the legendary reliability and low cost of ownership of its predecessor, the ubiquitous maintaining CFM56 engine family. The LEAP-1A is an engine as an option on the A320neo family; the LEAP-1B is the sole powerplant for Boeing' s new 737 MAX; and the LEAP-1C engine is the sole Western powerplant for the COMAC C919.

### **About CFM International**

LEAP engines are products of CFM International, a 50/50 joint company between Snecma (Safran) and GE. CFM is the world' s leading supplier of commercial aircraft engines, with more than 26,500 delivered to 530 operators around the globe. The company CFM officially launched the LEAP engine, which is its first all-new

centerline engine in nearly 40 years, in 2008. For more information, visit us at [www.cfmaeroengines.com](http://www.cfmaeroengines.com) or follow us on Twitter @CFM\_engines.

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